

### Remarks

In the Office Action mailed July 14, 2004, pending claims 1-6 were rejected under 35 USC 102(b) as being anticipated by US Patent No. 5,719,952 (Rooks). The Office Action also objected to claims 7-8 as being dependent on a rejected base claim but the Examiner indicated claims 7-8 would be allowable if rewritten in independent form including limitations of the base claim and any intervening claims. Applicant wishes to thank the Examiner for the allowance of claims 7-8 and the well-reasoned Office Action. However, for the reasons outlined herein, Applicant respectfully traverses the rejections and kindly requests reconsideration of the pending claims.

By this amendment, claim 7, has been amended to be in independent form consistent with the reasons for allowance set forth by The Examiner. Claims 7-8 should now be in condition for allowance. New Claims 12-20, although in different form, are directed to allowable subject matter based, in part, on the discussion of allowable subject matter set forth in the Office Action.

Specifically, independent claim 12 recites:

*12. (New) A method for inspecting a BGA joint comprising the steps of:*  
*finding a location of the BGA joint;*  
*improving the location using a fine locator;*  
*measuring, in a slice image, a plurality of diameters through the BGA*  
*joint at predetermined angles; and*  
*calculating a deviation using the measured diameters and an expected*  
*diameter.*

It is submitted that the prior art of record, among other differences, does not disclose the limitation “*calculating a deviation using the measured diameters and an expected diameter*” as contained in independent claim 12. Claims 13-20 are dependent claims which depend on base claim 12 and should likewise be allowable.

As indicated above, claims 1-6 were rejected under 35 USC 102(b) as being anticipated by US Patent No. 5,719,952 (Rooks). It is well established that for a reference to anticipate the present invention, the reference must teach every aspect of the invention

explicitly or impliedly. Any claimed feature not taught directly, must be present inherently. Independent claim 1 recites a four (4) step method for inspecting a BGA joint. Specifically, claim 1 recites:

1. (Original) *A method for inspecting a BGA joint comprising the steps of:  
finding a location of the BGA joint;  
improving the location using a fine locator;  
measuring in a slice image, a plurality of diameters through the BGA joint at predetermined angles; and  
applying a rule to compare the measured diameters to an expected diameter.*

The Office Action suggests that each of these four steps is taught by Rooks and generally refers to selected text within the Rooks disclosure as its core supporting language. However, it is clear from a complete reading of Rooks that it does not disclose, as the Office Action suggests, the limitation of “...*measuring in a slice image, a plurality of diameters through the BGA joint at predetermined angles...*” found in independent claim 1.

At column 7, lines 1-55 with reference to Fig. 7, Rooks discloses various measurements and measurement routines. As disclosed therein, Rooks teaches common measurements for each joint at three specific image slices, namely a Ball slice, Pad Slice and Package Slice (**Emphasis added**). The Office Actions suggests this passage discloses the plurality of diameters claimed in the present application. However, claim 1 of the present application requires such measurement of a plurality of diameters in “*a slice image*”, rather than multiple slice images as taught by Rooks.

There are other differences between the Rooks disclosure and the present claims. However, Applicant maintains that the above-identified difference, is sufficient to patentably distinguish Applicant’s invention from the Rooks disclosure. Original claims 2-6 as well as new claims 10-11 all depend from independent claim 1 and are also patentably distinguished from the Rooks disclosure. In fact, new claims 10-11 are directed to further limit and differentiate the slice image of the present invention.

No new matter has been added and no new claim fees are due since the number of pending claims does not exceed the number previously paid for. Nevertheless, the Commissioner is also hereby authorized to charge Deposit Account Number 20-0515 for any fee deficiency, or to credit this Deposit Account Number for any overpayment.

Applicant contends that the application is now in condition for allowance. A notice to that effect is earnestly solicited.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read 'R. Hampsch', with a large, sweeping initial 'R' and a stylized 'M' at the end.

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